

ATTACHMENT A REMARKS

Before addressing the issues raised in the Office Action, it is noted that the phrase "carbon black powder" which is used in a number of instances in the specification and claims has been changed throughout to read -- black powder --. The term "black powder" is also used in the specification (see, e.g., Example 3). In addition, paragraph [0010] discusses Grade 7 "carbon black powder" which actually refers to Grade 7 black powder, a well-known product with a mil spec. It is believed that the term "carbon black powder" might be misconstrued as referring to a powder made from "carbon black" wherein what is clearly intended by the term is "black powder," an energetic material generally containing potassium nitrate, sulphur and charcoal (carbon). The composition may vary but black powder usually contains charcoal or another carbon provider. However, carbon black is not black powder, and it is believed that the specification and claims are improved by the amendment that has been made.

Turning to the Office Action, it is noted that claims 3-9 and 13 and 15 have been "withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim." It is respectfully submitted that claims 3, 4, 5 and 6 should not have been withdrawn. These claims are generic to the elected species (viz., nanotubes, carbon black and palladium) in contrast to a claim such as claim 7 wherein the energetic material is recited as being ammonium perchlorate. In this regard, it is noted that claim 12 has been examined while claim 3 which is clearly of similar scope to claim 12 has been withdrawn. Similar remarks apply to examined claim 14 and withdrawn claim 6. Thus, it is respectfully submitted that claims 3-7 should have been, and should be, examined along with the other claims that have been examined. Moreover, because, as set forth below, generic claims 16 and 17 are also allowable over the prior art, all of the claims presented should be examined and allowed.

Turning to the rejection on prior art, claims 12, 14, 16 and 17 have been rejected under 35 USC 103(a) as being unpatentable over Ciccone et al ("Ciccone") in view of Ajayan et al ("Ajayan"). This rejection is respectfully traversed.

The Ciccone patent discloses an axial igniter which preferably has a composition of 5-90% by weight of stabilized red phosphorous, 5-90% by weight of barium nitrate and 0-10% by weight of calcium resinate. The calcium resinate serves as a binder in the composition, and while it is agreed that the first full paragraph of column 3 (lines 5-7) indicates that carbon black can be used in place of calcium resinate, it is important to understand that the carbon black would similarly be used as a binder for the composition. In contrast, in accordance with the claims, black powder is the energetic material to be ignited.

It is also noted that the axial igniter of the Ciccone patent is sheathed in aluminum or aluminum alloy (see lines 23 and 24 of column 1) which are also preferred materials for the axial igniter sheath (see lines 17 and 18 of column 3). Thus, the axial igniter 14 is located in a sheath (projectile 13) within a cartridge case 11 and there is no disclosure in the Ciccone reference that the igniter includes a light ignitable energetic composition. Moreover, because the igniter is located in a sheath of aluminum and is further housed within a cartridge case, this would prevent light from reaching the axial igniter composition. Thus, it is respectfully submitted that it would not be obvious to combine this reference, which discloses an arrangement which prevents light from reaching the axial igniter, with a patent relating to a light ignitable energetic composition.

Turning to the Ajayan reference, to the extent that this is an effective reference against this application (and that the provisional application supports the relevant disclosure therein), it is respectfully submitted that there is no teaching in the reference that it was obvious at the time of the Ajayan reference to develop flash-ignitable energetic materials. In this regard, in paragraph [0024], Ajayan mentions "ignition devices" and "nanotubes adjacent to an ignitable, volatile or gas generating material." The Ajayan patent also discloses that the nanotubes are located adjacent to those materials. This clearly contrasts to the present invention as claimed wherein the nanotubes are mixed with the energetic materials, rather than the nanotubes and energetic materials being two separate entities, as in Ajayan, wherein one is ignited and the other follows. In any event, given the actual teachings of the two references, it is respectfully submitted that it would not be obvious to combine the Ciccone and Ajayan patents and, moreover, it is respectfully submitted that no fair combination of these

references could result in the present invention as claimed given the actual teachings of the references. Accordingly, allowance of the application in its present form is respectfully solicited.

END REMARKS